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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte MASAHIRO KAJIWARA

Appeal 2007-4461
Application 10/669,700
Technology Center 1600

Decided: March 18, 2008

Before DEMETRA J. MILLS, ERIC GRIMES, and JEFFREY N. FREDMAN, *Administrative Patent Judges*.

GRIMES, *Administrative Patent Judge*.

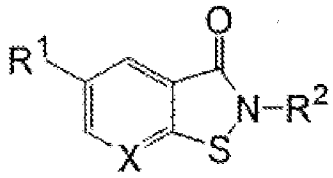
DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 involving claims to a method of treating ulcers and gastritis, which the Examiner has rejected as anticipated or obvious. We have jurisdiction under 35 U.S.C. § 6(b). We affirm in part.

BACKGROUND

The Specification states that a "substance having an action of inhibiting an activity of urease produced by Helicobacter pylori, namely, a

urease inhibitor is effective to prevent and treat the development of gastrointestinal diseases such as gastric mucosa injury" (Spec. 2: 7-10). The Specification discloses that compounds of formula (1) are urease inhibitors:



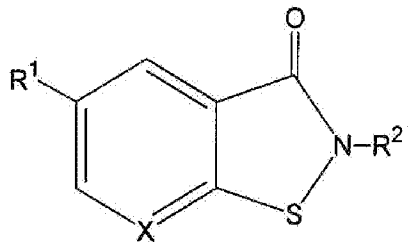
wherein R^1 represents a hydrogen atom or an amino group, R^2 represents a hydrogen atom, a lower alkyl group, or an acetyl group, and X represents a carbon atom or a nitrogen atom (*id.* at 3: 22 to 4: 4). The compound of formula 1 in which "R^1 and R^2 represent a hydrogen atom and X represents a carbon atom, namely, 1,2-benzoisothiazol-3(2H)-one (BIT) is a compound whose antimicrobial activity has conventionally been known (*id.* at 5: 11-15). "However, there has never been reported the fact that the compound has a urease [sic, urease inhibiting?] activity" (*id.* at 6: 1-2).

DISCUSSION

1. CLAIMS

Claims 9-20 are pending and on appeal. Appellants have argued the anticipation rejection separately with respect to claims 11, 17, and 19 (Br. 19). Claims 9, 11, and 14 are representative and read as follows:

9. A method of treating gastric mucosa injury caused by urease, which comprises administering to a person in need of a therapeutically effective amount of an isothiazole compound represented by formula (1):



(1)

wherein R^1 represents a hydrogen atom or an amino group, R^2 represents a hydrogen atom, a lower alkyl group, or an acetyl group, and X represents a carbon atom or a nitrogen atom, or an adduct salt thereof.

11. A method according to claim 9, wherein the gastric mucosa injury comprises chronic gastritis.

14. A method according to claim 9, further comprising administering at least one additional pharmacologically active ingredient chosen from antibiotics, nitronidazole antiprotazoal [sic] agents, antiulcer drugs, and proton pump inhibitors.

2. ANTICIPATION

Claims 9-13 and 15-20 stand rejected under 35 U.S.C. § 102(b) as anticipated by Hirai.[1] (The statement of this rejection in the Examiner's Answer also includes claim 14, but the Examiner has conceded that Hirai does not teach a combination of active agents (Answer 11). It is our understanding that the anticipation rejection does not apply to claim 14.)

The Examiner finds, and Appellants do not dispute, that Hirai teaches compounds within the scope of the instant claims' formula 1 (Answer 5). The Examiner also finds that Hirai teaches using such compounds for treating ulcers (*id.*) and reasons that the disclosed method would inherently treat an injury caused by urease or *Helicobacter pylori*, as recited in the

[1] Hirai et al., JP 04-77476, March 11, 1992. Our citations are to the English-language translation that is of record.

instant claims, because "it is well known in the art that Helicobacter pylori is the culprit of peptic ulcer disease" (*id.*).

We agree with the Examiner that Hirai anticipates claims 9, 10, 12, 13, 15, 16, 18, and 20. These claims are directed to methods of treating "gastric mucosa injury" or "gastroduodenal ulcer" caused by either urease or *H. pylori*, by administering compounds of formula (1). It is undisputed that Hirai teaches compounds of formula (1). Hirai also teaches that the disclosed compounds "are useful for the prevention or treatment of gastrointestinal diseases, etc. of mankind, e.g., gastric ulcer, duodenal ulcer," etc. (Hirai 38).

We agree with the Examiner that practicing the method that is disclosed by Hirai would inherently result in treating gastric mucosa injury and gastroduodenal ulcers caused by urease or *H. pylori*. The instant Specification provides evidence to support this conclusion: In its discussion of "Background Art," the Specification states that "[i]t has recently been made clear that urease produced by Helicobacter pylori has a close relation to the development of gastrointestinal diseases such as chronic gastritis and gastroduodenal ulcer" (Spec. 1). Also in the "Background Art" section, the Specification also states that "a urease activity inhibitor is effective to prevent and treat the development of gastrointestinal diseases such as gastric mucosa injury, and *such a urease activity inhibitor has attracted special interest recently*" (*id.* at 2, emphasis added). Thus, the Specification teaches that the association between gastrointestinal disease, including ulcers, and urease produced by *H. pylori* was part of the background knowledge shared by those skilled in the art.

The Examiner has asserted that nine out of ten ulcers, in fact, are caused by *H. pylori* (Answer 10). Appellants challenge this assertion as being "[w]ithout citation to any evidence on the record" (Reply Br. 3), but the Examiner's list of "Evidence Relied Upon" includes a web site from the Centers for Disease Control and Prevention (CDC). The Examiner cited the web site on a PTO-892 form and the official Image File Wrapper includes a printout of the contents of the CDC web site. The web site states that "[a]lthough we used to think that spicy food, acid, and stress were the major causes of ulcers *we now know that nine out of ten ulcers are caused by H. pylori*" (CDC web site printout, first page, emphasis added).

The evidence of record thus supports the Examiner's assertion that 90% of ulcers are caused by *H. pylori* infection. It might have been better practice to cite the evidence earlier in prosecution, but Appellants did not challenge the citation of new evidence in the Examiner's Answer or request that prosecution be reopened. And, since Appellants have already provided evidence supporting their position that not all ulcers are caused by *H. pylori*, we do not think it is unfair to consider the Examiner's evidence.

Appellants argue that "not all ulcers are caused by urease or *H. Pylori*," and, "in the large number of ulcer patients not having injury caused by urease or *Helicobacter pylori* infection, the use of a compound according to Hirai would not and cannot treat injury caused by urease or *Helicobacter pylori*" (App. Br. 10). Appellants cite several references to support their position that "gastrointestinal ulcers can be caused by a variety of conditions or factors, including:

1) infection with *Helicobacter pylori*,

> 2) use of non-steroidal anti-inflammatory drugs: NSAIDs (e.g., aspirin),
>
> 3) unusually strong digestive activity with excess secretion of gastric acid, or
>
> 4) others (e.g., stress)."

(App. Br. 15.) Appellants specifically cite Huang,[2] Wolfe,[3] Wallace,[4] and Langenbach[5] as teaching that NSAIDs increase the risk of ulcers independently of *H. pylori* infection, and act by a mechanism different from that of *H. pylori* infection (App. Br. 15-16).

Appellants' evidence does not persuade us that the Examiner's rejection should be reversed. Appellants' evidence shows that some ulcers have causes other than *H. pylori* infection, but Appellants have pointed to nothing in the references they cite that contradicts the conclusion of the CDC that 90% of ulcers are caused by *H. pylori*. We conclude that, based on a preponderance of the evidence of record, treating ulcers with the compounds disclosed by Hirai would inherently involve treating an injury caused by urease or *Helicobacter pylori*, as recited in the instant claims.

Appellants argue that anticipation by inherency requires that the claimed method is "necessarily and always achieved by the prior art

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[2] Huang et al., "Role of *Helicobacter pylori* infection and non-steroidal anti-inflammatory drugs in peptic-ulcer disease: a meta-analysis," Lancet, Vol. 359, pp. 14-22 (2002).

[3] Wolfe et al., "Gastrointestinal toxicity of nonsteroidal antiinflammatory drugs," New England Journal of Medicine, Vol. 340, pp. 1888-1899 (1999).

[4] Wallace et al., "NSAID-induced gastric damage in rats: Requirement for inhibition of both cyclooxygenase 1 and 2," Gastroenterology, Vol. 119, pp. 706-714 (2000).

[5] Langenbach et al., "Prostaglandin synthase 1 gene disruption in mice reduces arachidonic acid-induced inflammation and indomethacin-induced gastric ulceration," Cell, Vol. 83, pp. 483-492 (1995).

method" (App. Br. 11). Appellants cite *Perricone v. Medicis Pharm. Corp.*, 432 F.3d 1368 (Fed. Cir. 2005), as supporting this position (App. Br. 18-19, Reply Br. 5).

We do not agree with Appellants' reading of the case law. The *Perricone* court considered claims addressed to, among other things, a "method for preventing sunburn damage to exposed skin surfaces" by topically applying a certain composition. *Perricone*, 432 F.3d at 1378. The prior art disclosed "a cosmetic composition for topical application" that, the court held, met the limitations of Perricone's claims. *Id.* at 1376. The court held that the claimed method for preventing sunburn damage was anticipated by the prior art because "all skin surfaces are susceptible to sunburn damage, and because one can only realistically apply a composition to a skin surface when that surface is exposed." *Id.* at 1379.

In *Perricone*, as in this case, it would be possible for a person practicing the prior art method to do so without meeting all the limitations of the claims at issue. The prior art method in *Perricone* could have been practiced by someone who stayed indoors all day, or who applied the cosmetic composition after sunset, or who for whatever reason did not expose the treated skin to sunlight. The possibility that the claimed method would not be practiced every time someone carried out the prior art method did not stop the court from holding that the prior art method anticipated the claims.

Similarly, the presently claimed invention could be practiced on a patient who had an ulcer caused by something other than *H. pylori* infection. Nonetheless, the evidence of record shows that 90% of ulcers are caused by

H. pylori infection (see the CDC web site). Thus, 9 times out of 10 (on average), someone carrying out the prior art method would also be treating "gastric mucosa injury" or "gastroduodenal ulcer" caused by either urease or *H. pylori*, as recited in instant claims 9, 10, 12, 13, 15, 16, 18, and 20. In our view, the Examiner's rejection is supported by the overwhelming statistical likelihood that the limitations of the instant claims would be met by practicing Hirai's method.

With respect to claims 11, 17, and 19, Appellants argue that the Examiner has not shown, or even contended, that Hirai teaches or suggests a method of treating chronic gastritis (App. Br. 19).

The Examiner responds that gastritis is inflammation of the stomach due to the action of a corrosive agent, which could be stomach acid, and that Hirai teaches production of stomach acid will be suppressed by the disclosed compounds (Answer 11). The Examiner also argues that claims 11, 17, and 19 use "the same compound as taught by Hirai, in the same patient population in the same manner as instantly claimed" (*id.*).

We agree with Appellants that the Examiner has not made out a prima facie case of anticipation with respect to claims 11, 17, and 19. These claims are all directed to treatment of "chronic gastritis." The Examiner has not pointed to any disclosure of chronic gastritis in Hirai, and therefore her finding that Hirai's method treats the same patient population is not supported by the evidence. Nor has the Examiner provided evidence to support her position that Hirai's disclosure that certain compounds inhibit production of stomach acid would have been understood by those skilled in the art to be a teaching of treating gastritis with those compounds.

We reverse the rejection of claims 11, 17, and 19. To the extent that it is still of record, we also reverse the § 102 rejection of claim 14, since the Examiner has acknowledged that Hirai does not teach a combination of active ingredients (Answer 11).

3. OBVIOUSNESS

Claim 14 stands rejected under 35 U.S.C. § 103 as obvious in view of Hirai and Richardson.[6] The Examiner relies on Hirai for the teachings discussed above, but finds that "Hirai does not teach the combination of an additional pharmacological active ingredient" (Answer 3). The Examiner cites Richardson for teaching the treatment of ulcers "using omeprazole or other active ingredients in combination with one or more antibacterials" (*id.*). The Examiner concludes that combining Hirai's ulcer-treating compound with an antibacterial would have been obvious to those of ordinary skill in the art because Richardson teaches that such a combination is conventional (*id.*)

We agree with the Examiner's reasoning: Richardson teaches the combination of omeprazole and antibacterial agents for treating ulcers, and Hirai teaches compounds that have the same proton pump inhibiting activity as omeprazole (Hirai 4). A person of ordinary skill in the art would have considered it obvious to substitute Hirai's compounds for the omeprazole taught by Richardson, and to treat a patient having an ulcer with the combination.

[6] Richardson et al., "Proton pump inhibitors: Pharmacology and rationale for use in gastrointestinal disorders," Drugs, Vol. 56, pp. 307-335 (1998).

Appellants argue that, for motivation to combine the references, the Examiner relies on the rationale of *In re Kerkhoven*, 626 F.2d 846 (CCPA 1980), which is inapplicable here (Reply Br. 7-8).

Although the Examiner cited *Kerkhoven* in the statement of the rejection, we do not agree that the rejection relies solely on a *Kerkhoven*-type rationale. The Examiner's rejection states:

> It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use the combination of a compound to treat ulcers with one or more antibacterials with the reasonable expectation of successful treatment of ulcers because it is conventional (See Richardson page 307 last line) to administer ulcer treatment compounds with antibacterial compounds for a combination ulcer treatment and . . . Hirai teaches conventional ulcer treatment compounds.

(Answer 3.) The rejection concludes "Rationale: Richardson teaches the combination of known ulcer treatment compounds with known antibacterial compounds to eradicate H. pylori in over 90% of cases (page 307 last line)" (*id.* at 4).

In our opinion, the Examiner has provided a sufficient basis for concluding that those skilled in the art would have found it obvious to combine Hirai and Richardson. The rejection of claim 14 under 35 U.S.C. § 103 is affirmed.

SUMMARY

We affirm the rejection of claims 9, 10, 12, 13, 15, 16, 18, and 20 under 35 U.S.C. § 102(b) and the rejection of claim 14 under 35 U.S.C. § 103. We reverse the rejection of claim 11, 17, and 19.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED-IN-PART

Ssc:

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